

REMARKS

This paper is being provided in response to the Office Action mailed February 25, 2004, for the above-referenced application. In this response, Applicant has amended claims 1 and 3 and added new claims 8-11 to clarify that which Applicant considers to be the invention. Further, Applicant has amended the specification and figures for purposes of clarification. Applicant respectfully submits that the amendments to the claims are fully supported by the originally-filed specification and that the amendments to the specification and figures do not add new subject matter.

The objections to the drawings are addressed by amendments to the specification and drawings contained herein and as explained above in the "Amendments to the Drawings" section. Accordingly, Applicant respectfully requests that these objections be reconsidered and withdrawn.

The rejection of claims 1 and 3-7 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,160,533 to Tamai et al. (hereinafter "Tamai") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 1, as amended herein, recites an LCD control unit for driving an LCD panel in an LCD device. The LCD control unit includes a signal controller for generating a voltage address signal and a polarity control signal. A voltage generator block generates a plurality of (n) γ -voltage levels and a plurality of (m) Vcom-voltage levels based on the voltage

address signal. A voltage selecting block selects a specified number of the γ -voltage levels and one of said Vcom-voltage levels based on the polarity control signal and outputs the specified number of γ -correction voltages and Vcom voltage. The voltage selecting block includes an impedance converter that converts internal impedances of the γ -voltage levels and the Vcom-voltage levels and generates the specified number of the γ -correction voltages and said Vcom voltage. An LCD driver generates a set of display data signals based on a set of external data signals. The LCD driver receives the specified number of the γ -correction voltages output from said voltage selecting block and includes a γ -correction section for correcting voltage of the display data signals based on the specified number of the γ -correction voltages. Claims 2-7 depend directly or indirectly on independent claim 1.

The Tamai reference discloses a method and apparatus for driving a display panel. The system includes a reference voltage having a voltage level that increases or decreases stepwise with time. Gradation display is conducted by applying the voltage level at certain times to electrodes of the display panel. Multi-level gradation display is conducted without increasing the number of terminals to which voltage is inputted or the number of switching elements for applying the voltage to the electrodes. (See col. 5, lines 24-41 and col. 6, line 59 to col. 7, line 12 of Tamai.)

Applicant's independent claim 1, as amended herein, recites at least the features of a LCD control unit with a voltage selecting unit that includes *an impedance converter that converts internal impedances of the γ -voltage levels and the Vcom-voltage levels and generates the specified number of the γ -correction voltages and the Vcom voltage.* Applicant has found that

the configuration of the present claimed invention in which the voltage selecting block, including an impedance converter, which generates and selects γ -correction voltages and a Vcom voltage for delivery an LCD driver and an LCD panel, respectively, provides a system capable of being software adjusted and offering enhanced control of a liquid crystal display. (See, for example, page 7, lines 19-25; page 11, line 23 to page 13, line 15 and page 14, line 24 to page 15, line 18 of the present application.)

Applicant respectfully submits that Tamai does not teach or fairly suggest at least the above-noted features as claimed by Applicant. The Office Action cites element 63 of Figure 4 of Tamai as disclosing a voltage selecting circuit. However, circuit 63 is disclosed as being formed of eight analog switches AS1 to AS8. (See col. 16, lines 31-34 of Tamai.) There is mention made of a voltage selecting block including an impedance converter that converts internal impedances of the γ -voltage levels and the Vcom-voltage levels and generates the specified number of γ -correction voltages and the Vcom voltage, as is claimed by Applicant. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

The rejection of claim 2 under 35 U.S.C. 103(a) as being unpatentable over Tamai in view of U.S. Patent No. 5,910,796 to Gormish (hereinafter "Gormish") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

The features of claim 1 are discussed above with respect to Tamai. Claim 2 depends thereon.

The Gormish reference discloses a method of performing gamma correction for a display device. The Office Action cites Gormish as disclosing software controlling and setting gamma correction signals.

Applicant respectfully submits that Gormish fails to overcome the above-noted deficiencies of Tamai with respect to Applicant's claimed invention. Gormish makes no reference to an impedance converter. Specifically, neither Gormish nor Tamai, taken alone or in any combination, teach or fairly suggest, at least the features of a LCD control unit with a voltage selecting unit that includes *an impedance converter that converts internal impedances of the γ -voltage levels and the Vcom-voltage levels and generates the specified number of the γ -correction voltages and the Vcom voltage*, as is claimed by Applicant. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Further, Applicant has added new claims 8-11 and respectfully submits that these claims are patentable over the prior art of record.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
CHOATE, HALL & STEWART,

A handwritten signature in dark ink, appearing to read "Donald W. Muirhead", is written over a horizontal line.

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